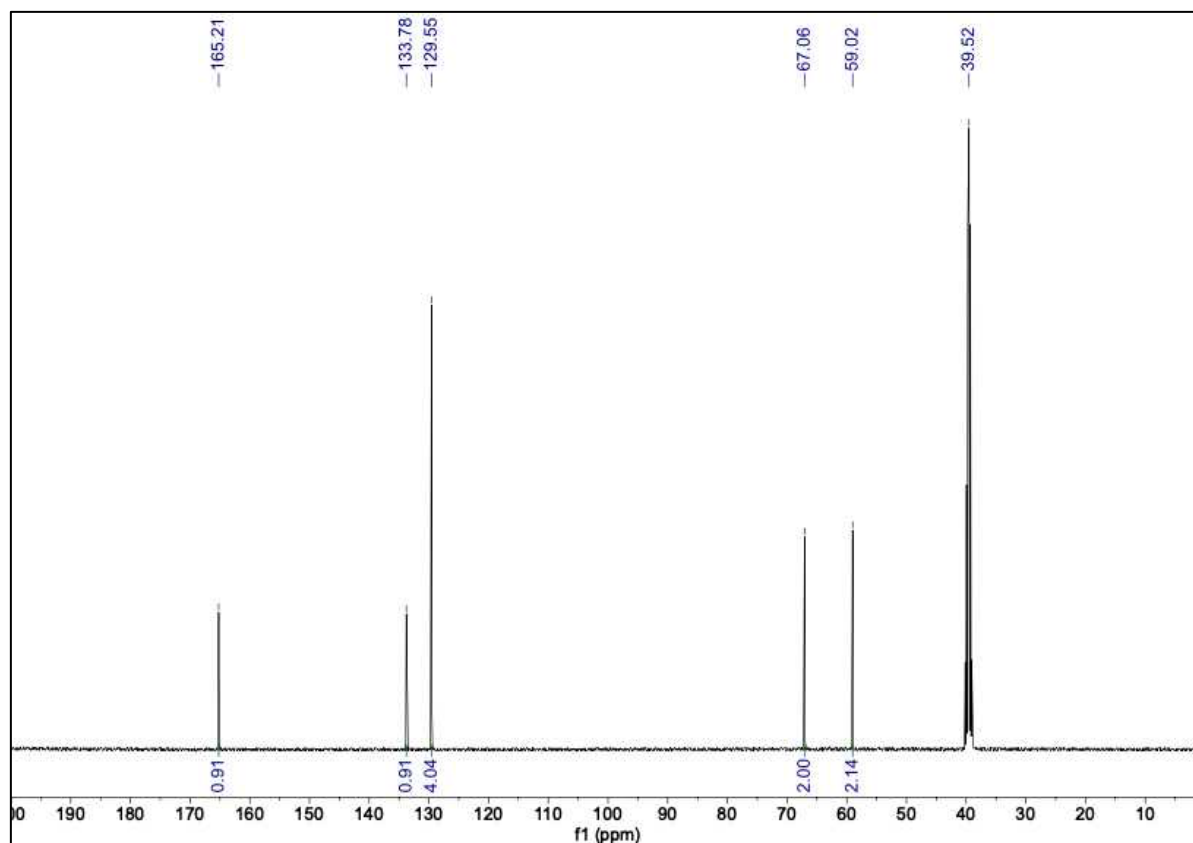
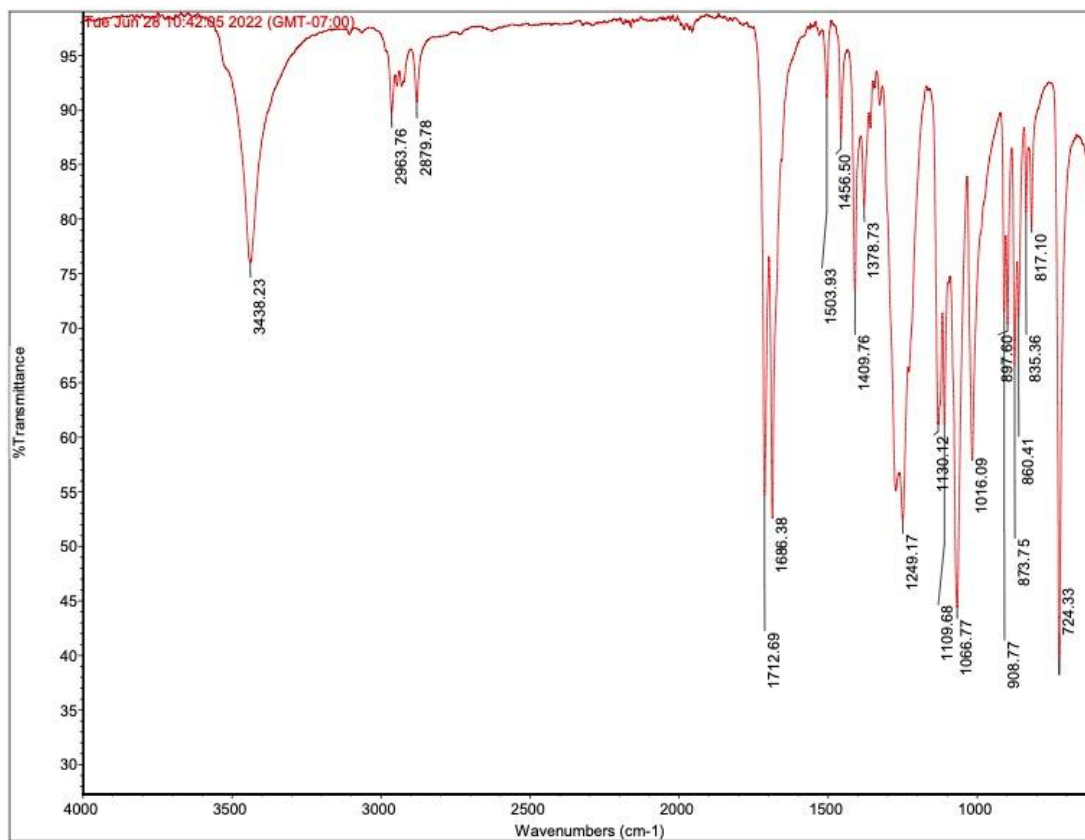


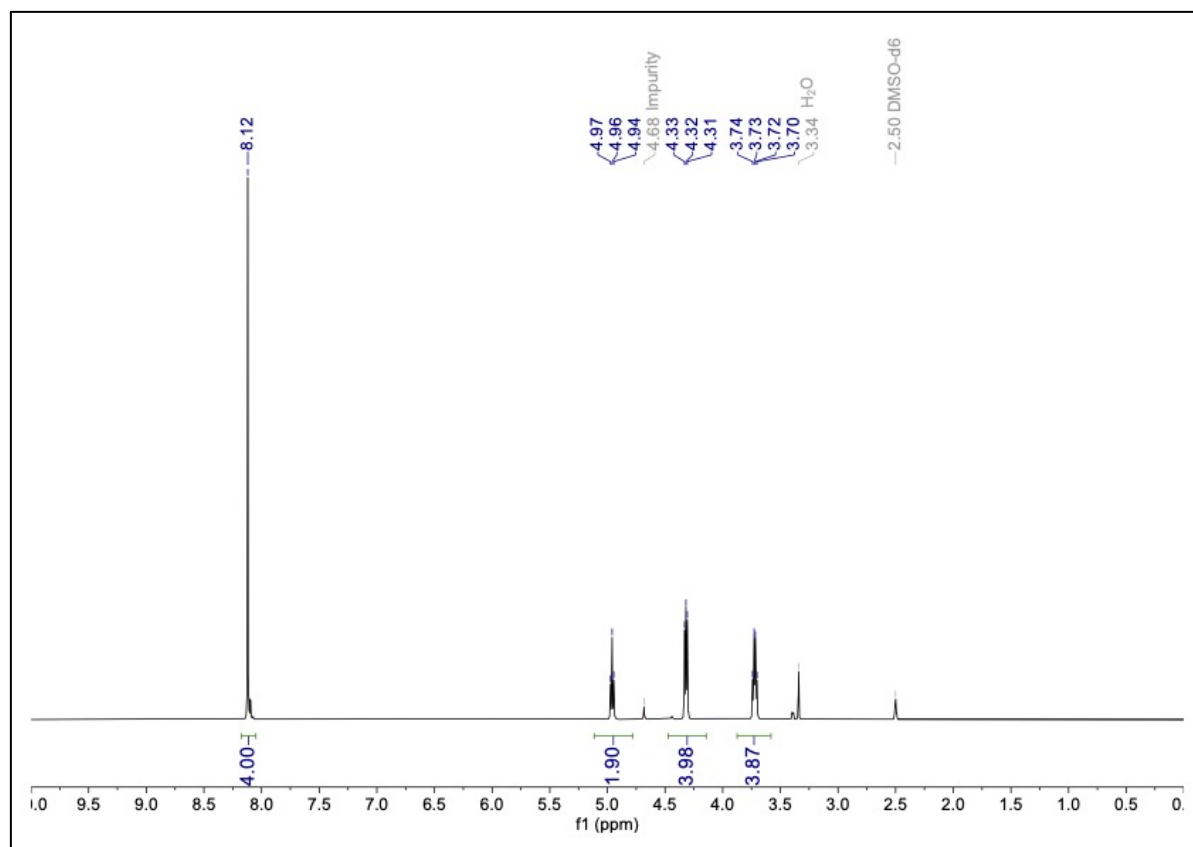
**Figure S1.**  $^1\text{H}$  NMR full spectrum from 10 to 0ppm of crystalline glycolysis product. The spectrum is referenced to DMSO-*d*<sub>6</sub>. A water impurity can be seen at 3.4 ppm.



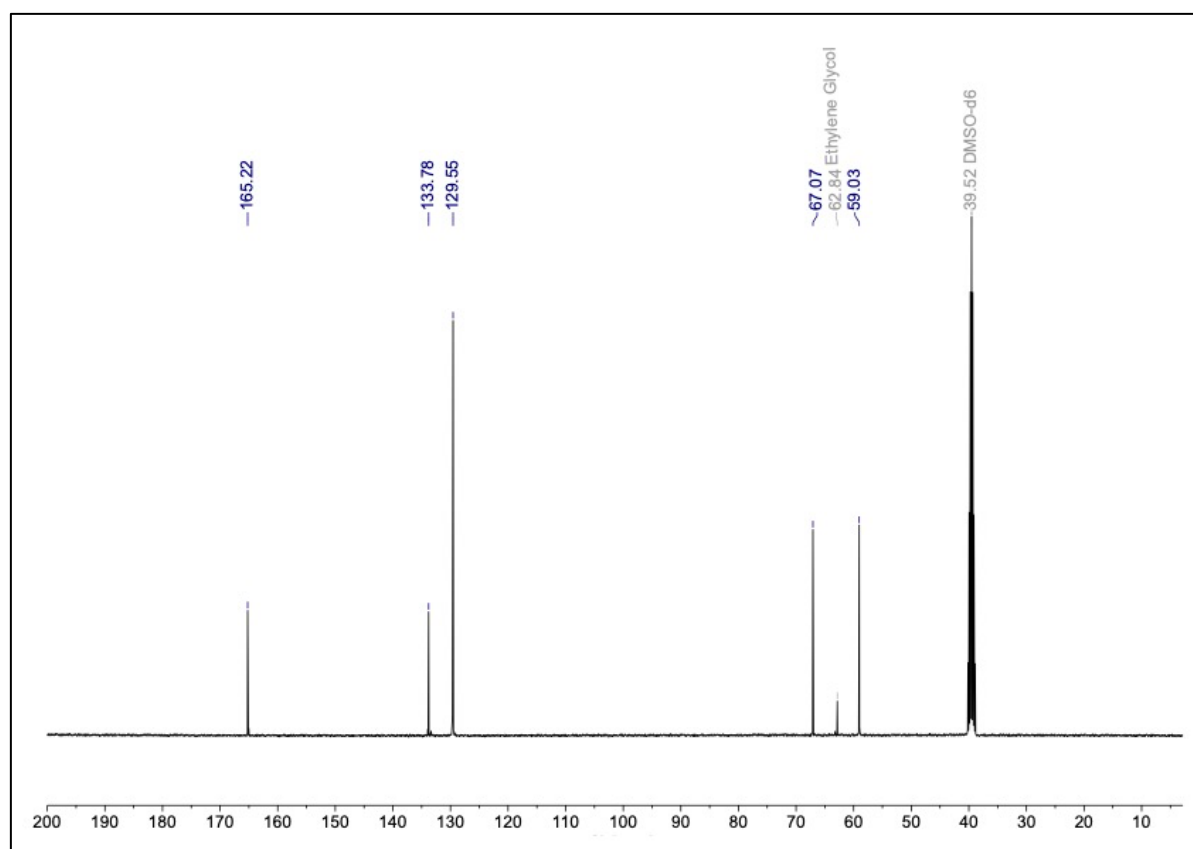
**Figure S2.**  $^{13}\text{C}$  NMR full spectrum from 200 to 0 ppm of crystalline glycolysis product. The spectrum is referenced to  $\text{DMSO-}d_6$ .



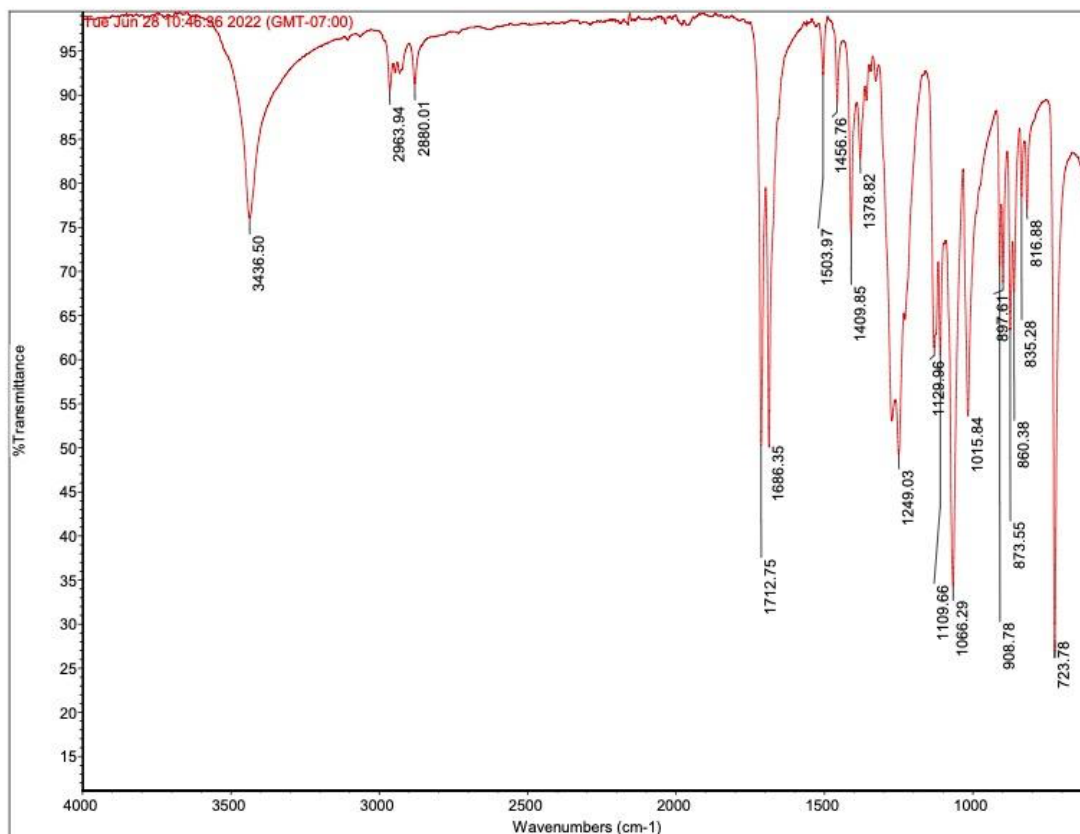
**Figure S3.** IR full-spectrum (4000 to 600  $\text{cm}^{-1}$ ) of crystalline glycolysis product. The spectrum was taken with a solid sample using a diamond ATR accessory.



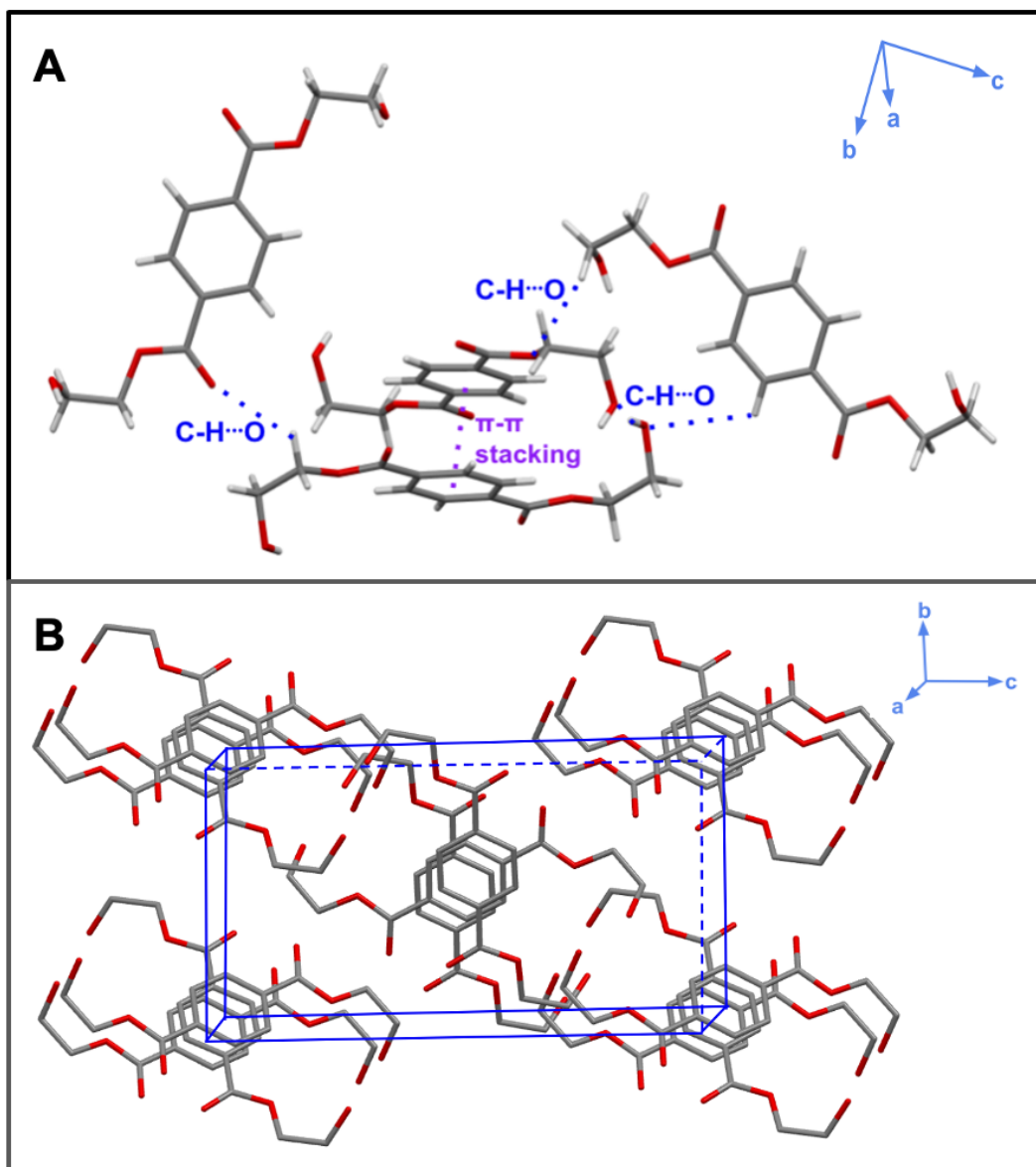
**Figure S4.**  $^1\text{H}$  NMR full spectrum from 10 to 0 ppm of powder-like glycolysis product. The spectrum is referenced to  $\text{DMSO-}d_6$ . An ethylene glycol impurity can be seen at 3.4 ppm and an unknown impurity can be seen at 4.7 ppm.



**Figure S5.**  $^{13}\text{C}$  NMR full spectrum from 200 to 0 ppm of powder-like glycolysis product. The spectrum is referenced to DMSO- $d_6$ . An ethylene glycol impurity can be seen at 62.8 ppm.



**Figure S6.** IR full-spectrum (4000 to 600  $\text{cm}^{-1}$ ) of powder-like glycolysis product. The spectrum was taken with a solid sample using a diamond ATR accessory.



**Figure S7.** SCXRD of crystalline BHET product. **(A)** Representative short contact interactions (minimum = sum of vdW radii minus 5, maximum = sum of vdW radii plus 0.15) between molecules 0.5\*0.5\*0.5 packing structure. Interactions include C-H...O (in blue) and  $\pi$ ... $\pi$  (in purple) **(B)** 1\*1\*1 packing structure with unit cell borders in blue. Hydrogen atoms are omitted for clarity.